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A New Species of Bat of the Genus *Sturnira* (Phyllostomidae) from the Island of Trinidad, West Indies

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The bats of the genus *Sturnira* inhabiting the island of Trinidad have been thought in the past to be referable to the widespread species, *Sturnira lilium* Geoffroy, 1810. The relative rarity of this genus, added to the superficial resemblance of its species, seems to have perpetuated this belief.

In the course of studies of *Sturnira,* all available specimens of this genus throughout its range of distribution have been assembled and examined. In the light of all this material the range of variation of the natural groups becomes evident, and it is possible to evaluate variants which by themselves would be practically impossible to interpret. The study of the conventional morphological characters of the skin, skull, and teeth of the assembled material indicates that the bats of this genus inhabiting the island of Trinidad represent a distinct morphological entity. This morphological entity is interpreted as a distinct species which is here described.

Sturnira tildae new species

(Plate 1 ; Plate 2, figs. 4, 5, and 6)

Type. Adult male in alcohol, American Museum of Natural History No. 149625 ; collected March 6, 1951, by William Beebe.

Paratype.—Adult female in alcohol, Chicago Natural History Museum No. 62011 ; collected March 19, 1947, by Frank C. Wonder at Plaisance, Mayoro Bay, Trinidad.

Type locality. Arima Valley, Trinidad.

Distribution. Trinidad.

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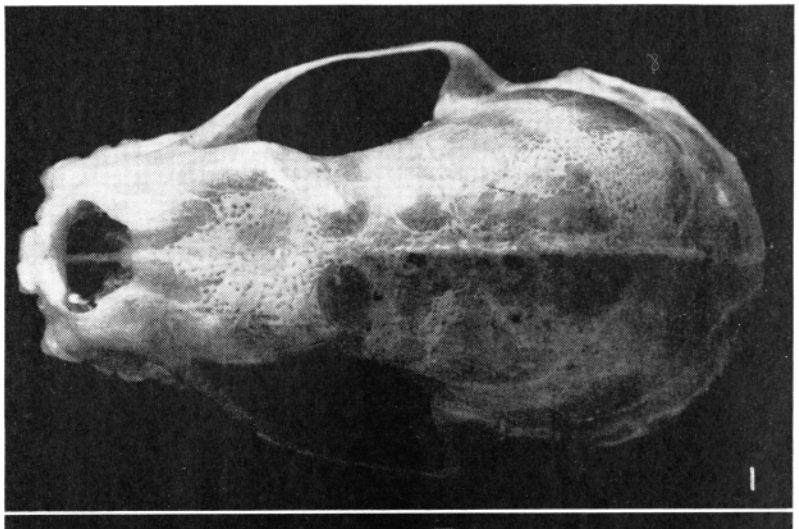
Characters and comparisons. SKULL: The skull combines characters found in *Sturnira lilium* and *S. ludovici* Anthony 1924. Anteriormost upper incisors bilobed, with lobes of equal size, forming a broad cutting edge (pl. 2, fig. 6) . Lingual cusps of upper molars indistinct from each other and low in height, forming a low lingual ridge which results in a broad and shallow U-shaped occlusal surface (pl. 2, fig. 5) ; this depression is extremely shallow in this species in contrast to the condition of *S. lilium* in which the lingual cusps form a relatively high cutting edge (pl. 2, fig. 8) . The second upper molar in *lilium* and *ludovici* possesses a small cusp located posterio-medially from the larger posterior and lateral cusp of the tooth (not shown in the illustrations) ; in *tildae* this small cusp is further reduced to a small tubercle connected by a low ridge with the apex of the anteriormost labial cusp (pl. 2, fig. 5, middle tooth) . Lower incisors faintly trilobed ; the median lobe equal in height to the lateral lobes of the tooth. Lower molars with lingual cusps (pl. 1, fig. 3 ; pl. 2, fig. 4) ; these cusps, although well developed, are lower and rounder than in *lilium* (pl. 2, fig. 7) . In this character *tildae* is intermediate between the cuspidate molar of *lilium* and the extremely smooth molar of *ludovici* (pl. 2, fig. 1) . Third upper and lower molars are proportionately larger in *tildae* than in either of the two species mentioned above.

SKIN : Hair long and silky. Interfemoral membrane relatively heavily furred. Color of dorsum dark ochraceous brown ; hair with a very narrow (1/2 mm) white band at base, followed by a broader ($3Y_2$ mm) dark grayish brown band, a slightly narrower (3 mm) **light buff band** (grayish in the male and yellowish in the female) , terminating in a narrow (17_2 mm) dark brown band (ochraceous in the male and reddish in the female) . Color of underparts light ochraceous brown. Color observations were made after drying the specimens with compressed air.

SIZE : In body and skull size *tildae* is similar to the larger individuals of *lilium* from the Amazon basin. In external measurements *tildae* is also similar to northern South American specimens of *ludovici,* **but**

Plate 1. ***Sturnira tildae,*** AMNH 149625 , type.
Figs. 1, 2. Dorsal and ventral aspect of cranium; X 4.2.
Fig. 3. Occlusal view of right mandibular tooth row; X 10.7.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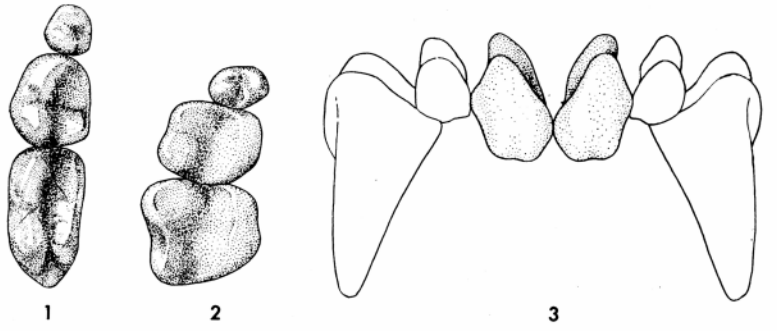
the skull is distinctly smaller than in this latter species. The measurements in millimeters of the type and paratype are as follows:

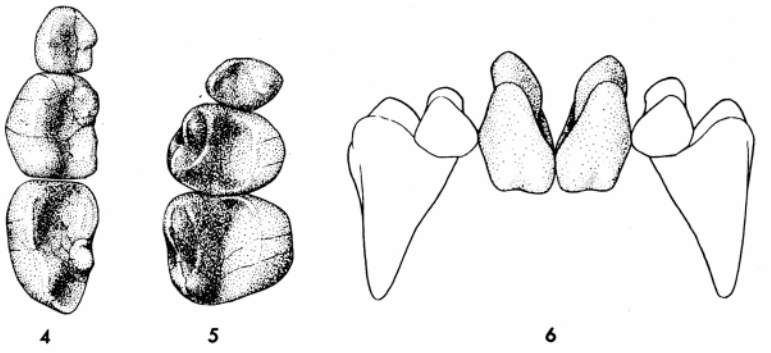
	AMNH 149625	CNHM 62011
Forearm	45.8	45.1
Metacarpal III	44.9	43.8
Metacarpal IV	45.8	43.5
Metacarpal V	47.5	45.1
Greatest length of skull	23.9	23.3
Condylobasal length	21.7	21.1
Zygomatic breadth	14.1	13.9
Mastoid breadth	12.5	.....
Palatal length	10.4	10.5
Interorbital constriction	6.6	6.3
Maxillary tooth row	7.1	7.1
Maxillary width across molars	8.3	8.1
Length of mandible	15.5	15.3
Canine to condyle*	15.1	14.8
Mandibular tooth row	7.9	7.8

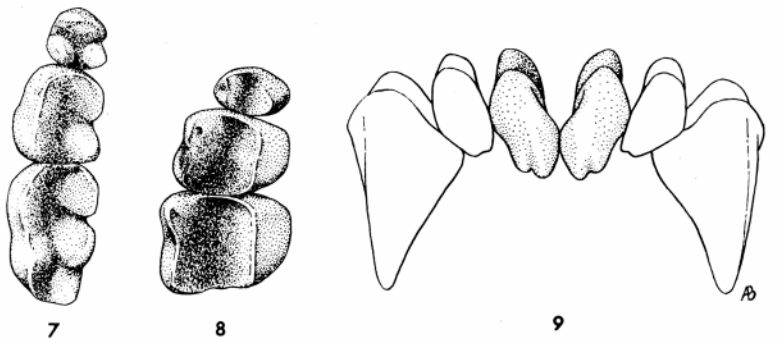
*Length from anterior face of lower canine to posterior border of articular condyle.

Discussion. If the cuspidate dentition as seen in *Sturnira* is, as is probable, the most primitive in the genus, then one can only interpret the condition seen in *S. tildae* and *S. ludovici* as relatively more advanced. From the morphological data studied it is tempting to conclude that this species now inhabiting Trinidad represents a remnant of a formerly widespread liliuin-like ancestral population. The trend toward reduction of molar cusps may be interpreted as the result of evolution subsequent to the isolation of the Trinidad population from this *lilium-like* stock. What evidence I have indicates that whenever isolation of populations occurs in this genus, whether in mountain ranges such as the Andes, or in islands such as Trinidad or Martinique, an accelerated rate of evolution results. 'Whatever genetic factors are responsible for this more rapid change, the result observable in all cases is toward the reduction or loss of cusps and thus development of a flatter tooth. In view of the great environmental difference between such areas as the temperate pine-oak zone of Mexico and the tropical rain forest of Trinidad, in both of which the genus shows the same reduction of cusps, it seems totally unlikely that such changes are directly adaptive.

Plate 2. Dental characters of *Sturnira ludovici, S. tildae,* and *S. lilium.* Occlusal view of right lower molar row (figs. 1, 4, 7), left upper molar row (figs. 2, 5, 8), and anterior view of upper incisors and canines (figs. 3, 6, 9). The third molar is uppermost and the lingual side is to the reader's right in all molar







tooth rows. X 9.7.

Figs. 1, 2, 3. *Sturnira ludovici* CNHM 44296 ♂. Ecuador.
Figs. 4, 5, 6. *Sturnira tildae* CNHM 62011 ♀. Trinidad. Paratype.
Figs. 7, 8, 9. *Sturnira lilium* CNHM 44121 ♂. Paraguay.

It seems more likely that they are brought about indirectly by being linked to other factors which in the smaller population may be selected for more successfully.

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It is a pleasure to name this species for Tilda Brandt, of Essen, Germany, in appreciation of her valuable help in translating the critical German literature pertaining to the genus *Sturnira.*

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